

**DYNAMIC BEHAVIOR OF LARGE ROTATING ELECTRIC MACHINES
(Analysis with Simplified Analytical Mathematical Models)**

Geraldo C. Brito Jr.
gcbrito@itaipu.gov.br

Keila B. Brol
aliekbb@yahoo.com.br

Kellen B. Brol
aliekbb@yahoo.com.br

ITAIPU BINACIONAL - PTI - UNIOESTE
Avenida Tancredo Neves, 6731 - Foz do Iguaçu - PR - Brazil

ABSTRACT

This paper describes the application of simplified analytical mathematical models on the analysis of the dynamic behavior of large rotating electric machines. It compares the results of mathematical model simulations with real data obtained in the commissioning of two new 700 MW generating units of Itaipu Power Plant. The results of such comparison show that simplified analytical mathematical models still are a very good option for primary analysis of rotating machines health condition monitoring.

Keywords: Vibrations, hydro-generator, analytical modeling.